REMARKS/ARGUMENTS

This paper is being provided in response to the Office Action dated May 11, 2006 for the above-referenced application. In this response, Applicant has amended Claims 1, 3, 6, 8, 15, 20, 21, and 29-52 in order to clarify that which Applicant deems to be the claimed invention. Applicant respectfully submits that the amendments to the claims are supported by the originally filed application.

Applicant thanks the Examiner for the indication regarding the allowable subject matter of Claims 27-28, and 51-52.

Applicant also thanks the Examiner for the indication regarding the allowability of Claims 3, 6-9, 15, 20, 21, 31, 34-37, and 43 if rewritten in independent form to include all limitations of the base claim and any intervening claims and if Applicant also overcomes any other rejection/objection corresponding to these claims.

In response to the objection of Claims 3, 6-9, 15, 20, 21, 31, 34-37, and 43, Applicant has amended Claims 3, 6, 8, 15, 20, 21, 31, 34, 36 and 43 in accordance with remarks set forth in the Office Action placing Claims 3, 6, 8, 15, 20, 21, 31, 34, 36 and 43 in independent form with Claims 7, 9, 35 and 37 depending therefrom. Additionally, Applicant has made other amendments and remarks herein in connection with Claims 3, 6-9, 15, 20, 21, 31, 34-37 in order to overcome other rejections/objections corresponding to these claims. Applicant respectfully requests that the objection be reconsidered and withdrawn. Applicant respectfully submits that Claims 3, 6-9, 15, 20, 21, 31, 34-37, and 43 are now in condition for allowance.

The rejection of Claims 29-52 under 35 U.S.C. 101 as being directed to non-statutory subject matter is 101 is hereby traversed and reconsideration thereof is respectfully requested in view of amendments and remarks herein. Applicant has amended Claims 29-52 in accordance with remarks set forth in the Office Action to recite a computer-readable medium encoded with a computer program. In view of the foregoing, Applicant respectfully requests that the rejection be reconsidered with withdrawn.

The rejection of Claims 1, 2, 4, 5, 10-14, 18, 19, 22-26, 29, 30, 32, 33, 38-42, and 46-50 under 35 U.S.C. § 102(e) as being unpatentable over Farmer et al (U.S. Patent No. 7,007,043, hereinafter referred to as "Farmer") is hereby traversed and reconsideration thereof is respectfully requested. Applicant respectfully submits that Claims 1, 2, 4, 5, 10-14, 18, 19, 22-26, 29, 30, 32, 33, 38-42, and 46-50, as amended herein, are patentable over the cited reference.

Claim 1, as amended herein, recites a method for providing a backup copy of data on a primary storage comprising: receiving a write request; journaling said write request in one of a plurality of partial journals, wherein each of said plurality of partial journals is used to journal a portion of write requests received from a different source; and updating said primary storage in accordance with said write request. Claims 1, 2, 4, 5, and 10-14 depend from Claim 1.

Claim 18 recites a system that performs a continuous back up of data included in a primary storage unit, comprising: a switch including input ports, each of said input ports being associated with a processor and a portion of memory; a plurality of partial journals, each of said

plurality of partial journals being associated with a unique one of said input ports and being stored in said portion of memory associated with said unique input port, said each partial journal including journal entries for write requests received on said unique input port; and a primary journal incorporating portions of said plurality of partial journals associated with write requests that have occurred earlier in time than those entries currently included in said partial journals. Claim 19 depends from Claim 18.

Claim 22 recites a method for providing a backup copy of data on a primary storage comprising: receiving a write request for a location in primary storage; receiving a copy of data at said location on said primary storage; journaling said write request in one of a plurality of partial journals in a partial journal entry including said copy prior to performing said write request; and updating said primary storage in accordance with said write request. Claims 23-26 depend from Claim 22.

Claim 29, as amended herein, recites a computer readable medium encoded with a computer program that provides a backup copy of data on a primary storage, the computer program comprising code that: receives a write request; journals said write request in one of a plurality of partial journals, wherein each of said plurality of partial journals is used to journal a portion of write requests received from a different source; and updates said primary storage in accordance with said write request. Claims 30, 32, 33, and 38-40 depend from Claim 29.

Claim 46, as amended herein, recites a computer readable medium encoded with a computer program that provides a backup copy of data on a primary storage, the computer

program comprising code that: receives a write request for a location in primary storage; receives a copy of data at said location on said primary storage; journals said write request in one of a plurality of partial journals in a partial journal entry including said copy prior to performing said write request; and updates said primary storage in accordance with said write request. Claims 47-50 depend from Claim 46.

Farmer is directed toward a backup system that can create a number of mountable representations of past contents of a storage volume. (Col. 1, Lines 20-24; Col. 2, Lines 40-45). Farmer discloses arrangements including a data management appliance 112 and 208. (See Figures 1 and 2). The data management appliance is programmed to behave as though it stores a number of duplicate copies of primary storage device 108 as it existed at certain points in time. (Col. 3, Lines 50-53). A number of schemes are available for providing replicated storage in a data management appliance. A Mirror in the Middle (MIM) replication scheme is disclosed in which atomic write events are recorded in a forward journal immediately so that data is always protected essentially as soon as it is created. At specified points in time, forward journal entries are used to produce snapshots recorded in a backward journal (Col. 4, Lines 13-29). Farmer also discloses a replication scheme using a self archiving log-structured volume recording every write event in a new location in primary storage. (Col. 4, Lines 32-47). Farmer discloses publishing point-in-time views of a primary storage device and making available a limited number of virtual views. (Col. 4, Lines 47-65).

Claim 1, as amended herein, is neither disclosed nor suggested by Farmer in that Farmer neither discloses nor suggests at least the features of ***a method for providing a backup copy of***

data on a primary storage comprising: ... journaling said write request in one of a plurality of partial journals, wherein each of said plurality of partial journals is used to journal a portion of write requests received from a different source, as set forth in Claim 1.

Page 3 of the Office Action cites Col. 1, Lines 35-40, Col. 2, Lines 55-56 and Col. 4, Lines 24-27 as support for disclosing the claimed step of journaling of Applicant's Claim 1. Col. 1, Lines 35-40 disclose using "some kind of journaling where write commands themselves are archived". Col. 2, Lines 55-56 disclose journaling changes on a secondary storage device. Col. 4, Lines 24-27 disclose using forward journal entries to produce snapshots reflecting the change in the primary storage over a period of time, and recording the snapshots in a backward journal. The foregoing citations of Farmer disclose journaling write events or write commands, but neither disclose nor fairly suggest use of a plurality of partial journals in which each partial journal journals a portion of write requests received from a different source.

In view of the foregoing, Applicant respectfully submits that the Farmer does not teach, disclose or suggest at least the foregoing recited features of Claim 1.

Applicant's independent Claim 29 recites features similar to those set forth above regarding Claim 1 which are neither disclosed nor suggested by Farmer. Thus, for reasons similar to those set forth regarding Claim 1, Applicant's Claim 29 is also neither disclosed nor suggested by Farmer.

Applicant's Claim 18 is neither disclosed nor suggested by Farmer in that Farmer neither discloses nor suggests at least the features of ***a system that performs a continuous back up of data included in a primary storage unit, comprising: ... a plurality of partial journals, each of said plurality of partial journals being associated with a unique one of said input ports and being stored in said portion of memory associated with said unique input port, said each partial journal including journal entries for write requests received on said unique input port;*** ... as set forth in Claim 18.

Page 4 of the Office Action cites Col. 1, Lines 35-40, Col. 2, Lines 55-56 and Col. 4, Lines 24-27 as support for disclosing the claimed partial journals as set forth in Claim 18. Each of these citations is discussed above. Applicant respectfully submits that the foregoing citations do not disclose or suggest at least the features of ***a plurality of partial journals, each of said plurality of partial journals being associated with a unique one of said input ports and being stored in said portion of memory associated with said unique input port, said each partial journal including journal entries for write requests received on said unique input port***, as recited in Claim 18.

Applicant's Claim 22 is neither disclosed nor suggested by Farmer in that Farmer neither discloses nor suggests ***a method for providing a backup copy of data on a primary storage comprising: receiving a write request for a location in primary storage; receiving a copy of data at said location on said primary storage; journaling said write request in one of a plurality of partial journals in a partial journal entry including said copy prior to performing***

said write request; and updating said primary storage in accordance with said write request, as set forth in Claim 22

Page 3 of the Office Action appears to rely on Col. 1, Lines 35-40, Col. 2, Lines 55-56 and Col. 4, Lines 24-27 as support for disclosing the claimed journaling step of Claim 22. Each of these citations is discussed above. Applicant respectfully submits that the foregoing citations neither disclose nor suggest at least the feature of ***journaling said write request in one of a plurality of partial journals in a partial journal entry including said copy prior to performing said write request***, as set forth in Claim 22. Farmer appears silent regarding a partial journal entry including a copy of the data at the location of the write request in which the copy of the data is prior to performing the write request.

Claim 46 recites features similar to those set forth regarding Claim 22 which are neither disclosed nor suggested by Farmer. Thus, for reasons similar to those set forth regarding Claim 22, Applicant's Claim 46 is also neither disclosed nor suggested by Farmer.

In view of the foregoing, Applicant respectfully requests that the rejection be reconsidered and withdrawn.

The rejection of Claims 16, 17, 44 and 45 under 35 U.S.C. § 103(a) as being unpatentable over Farmer is hereby traversed and reconsideration thereof is respectfully requested. Applicant

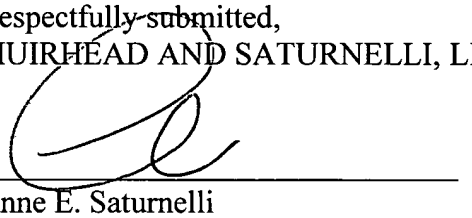
respectfully submits that Claims 16, 17, 44 and 45, as amended herein, are patentable over the cited reference.

Claims 16-17 depend from Claim 1. Claims 44-45 depend from Claim 29. For reason set forth above, Farmer neither discloses nor suggests independent Claims 1 and 29 and also neither discloses nor suggests Claims 16-17 and 44-45 that depend, respectively, therefrom.

In view of the foregoing, Applicant respectfully requests that the rejection be reconsidered and withdrawn.

Based on the above, Applicant respectfully requests that the Examiner reconsider and withdraw all outstanding rejections and objections. Favorable consideration and allowance are earnestly solicited. Should there be any questions after reviewing this paper, the Examiner is invited to contact the undersigned at 508-898-8604.

Respectfully submitted,
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